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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,075	02/15/2002	Bong-gi Kim	1293.1318	8497
21171	7590	07/02/2008	EXAMINER	
STAAS & HALSEY LLP			AGUSTIN, PETER VINCENT	
SUITE 700			ART UNIT	PAPER NUMBER
1201 NEW YORK AVENUE, N.W.				2627
WASHINGTON, DC 20005			MAIL DATE	DELIVERY MODE
			07/02/2008	PAPER

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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BONG-GI KIM

Appeal 2008-0869
Application 10/076,075
Technology Center 2600

Oral Hearing Held: May 14, 2008

22Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and
23ROBERT E. NAPPI, Administrative Patent Judges

26

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33 The above-entitled matter came on for hearing on Wednesday, May
3414, 2008, commencing at 9:00 a.m., at The U.S. Patent and Trademark
35Office, 600 Dulany Street, Alexandria, Virginia before Timothy J. Atkinson,
36Jr., Notary Public.

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2 MS. BOBO-ALLEN: Calendar No. 15, Appeal No. 2008-0869.

3Mr. Daebeler.

4 JUDGE HAIRSTON: Okay. Thank you.

5 MS. BOBO-ALLEN: Um-hum.

6 JUDGE HAIRSTON: Do you mind spelling your name for the
7record?

8 MR. DAEBELER: Yes, D as -- D-A-E-B-E-L-E-R.

9 JUDGE HAIRSTON: Okay, thank you. You may begin, I'm sorry.

10 MR. DAEBELER: Okay, great. My name is Paul Daebeler, and I'm
11representing the applicant, Mr. Kim. In this case the, the claims that are
12rejected are claims 1 -- 3 through, 3 through 15, 17, and 18 under Section
13103A, as being inpatentable over U.S. Patent No. 6,392,977 issued to Ando,
14et al., in view of U.S. Patent No. 5,659,531 issued to Ono, et al., and the
15admitted prior art which includes figure 1 and paragraphs 3 through 9 of the
16specification.

17 I was going to begin the presentation by -- the argument by discussing
18the admitted prior art and the present invention. In the admitted prior art,
19there is a dual wavelength laser diode. This is used in CD players and DVD
20players as examples. They create lights that -- light rays that hit a grating
21that then are -- impact a beam splitter and these -- this -- these light rays are
22reflected onto, onto a recording medium. Light rays are reflected back
23through the beam splitter. They also are incidental on a holographic element
24and through a concave lens and then also onto a photo detector. The
25reason -- the problem with this configuration or the enhancement that we're
26trying to achieve is that the, the hologram optical element being separate

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1from a beam splitter adds another component making the manufacturing of
2this type of device more cumbersome, also less reliable, because if there's
3exposed to heat, then what happens is there may be some -- the bonding that
4occurs may be impacted, and it may shift the components after substantial
5use for the -- in the CD system, because you want -- this is a very precise
6configuration in order that the rays precisely hit the photo detector for error
7tracking.

8 So in our device, which is figure 2 of the present application, what's
9happened is the -- one of the substantial improvements is to create a new
10beam splitter which includes a hologram element, excuse me, which --
11where the beam splitter includes a hologram surface as well as a reflecting
12surface. So the claim -- I'm going to direct you now to the claim language
13itself. Figure -- all the independent claims have a beam splitter, so in Claim
141, for example, the claim language reads "A beam splitter disposed on an
15optical path between the objective lens and the photo detector, beam splitter
16having a first surface to reflect the light beam and the second light beam
17toward the objective lens and simultaneously transmitting the first light
18beam and second light beam, and a second surface on which a hologram is
19formed to compensate for a deviation between optical axes of the first and
20second light beams transmitted through the first surface."

21 The reason why this deviation occurred is because you have a
22separation of the light beams. Items -- they would be items 53 and 55 in
23figure 2, separated by I think 1 or 10 micrometers as an example in the
24specification, and what they're doing is they're reflecting and -- off of the
25first surface 31 onto the recording medium. Light rays are then reflected
26from the light recording medium, transmitted through the first surface. Then

1there is a hologram section on second surface in order to correct this --
2correct any abnormality, and then they hit the photo detector for error
3tracking.

4 Now in the prior art, moving to the prior art, the Ando reference is the
5one reference that's used. That is -- I'm going to point reference figure 1
6here which is what the Examiner referred to during prosecution. In figure 1,
7they do have a dichroic hologram in the figure. However, that is separate
8from the beam splitter which is item 7. So 8 is a dichroic hologram, and also
9in this case, the Examiner did note during prosecution that Ando did not
10disclose the same type of beam splitter as we have disclosed in our
11invention.

12 So what the Examiner did was he applied Ono, and that would be
13figure 11A is what he referred to, and he was referring to the hologram
14element 216 in figure 11A in order to combine these two to come up with
15the present invention, with, excuse me, the claimed subject matter.

16 Now in figure 11A, you will notice that the semiconductor laser 210
17and also the reflections that occur from the optical disk, all these are
18reflecting off the second surface which has the hologram element 216.
19However, in our claim language, as we have indicated in claim 1, we have
20called for a beam splitter disposed on an optical path between the object lens
21and the photo detector, the beam splitter having first surface to reflect the
22first light beam and the second light beam toward the objective lens and
23simultaneously transmitting the first light beam and the second light beam
24and the second surface on which a hologram is formed to compensate for the
25deviation between optical axis of first and second light beams transmitted
26through the first surface. So there is a transmission through the first surface

1and a reflection occurring on the first surface, and this does not show this in
2figure 11A --

3 JUDGE SAADAT: Counsel --

4 MR. DAEBELER: -- and so that's, that's one of the arguments that we
5were making.

6 JUDGE SAADAT: If you continue with disclosure of Ono --

7 MR. DAEBELER: Yes.

8 JUDGE SAADAT: -- figure 15 is another embodiment that defers
9from figure 11A in the fact that the detectors are positioned at a different
10location than the laser source.

11 MR. DAEBELER: Okay.

12 JUDGE SAADAT: So it seems like the surfaces, whether they are
13transmitting or reflecting, pretty much depend on the positioning of
14detectors and the laser source, and in one embodiment, they're both on one
15side, which is shown in figure 11A. In another embodiment, they're at
16different locations which is shown in figure 15.

17 MR. DAEBELER: Yeah, in figure 15, let me refer to the -- moment
18to the specification. In this case, the, the difference here is that if you tried
19to combine the two, if you tried to combine figure 1 with this particular item,
20figure 1 of Ando, et al., shows that the configuration is for two optical disks,
212A and 2B, and this configuration, if you took this piece, this 218, and
22placed it into and substituted for the beam splitter, etc., it wouldn't work,
23because it's not correcting the optical axes. In other words, one of the items
24in there, in the claim language, was to correct the optical axes, and this does
25not indicate here in, in Ono, et al., I do not believe it indicates that there is a
26correction of the optical axes.

1 JUDGE SAADAT: But wasn't that the purpose of Ono? I refer you
2 to column 2, lines 45 through 47. There, there is a reference to detecting
3 focusing error signals and tracking error signals in the optical head.

4 MR. DAEBELER: Yes, but there isn't an indication, for example,
5 there are two photo sensors. If you -- there's one, one light stream coming
6 from figure 16. There aren't the two as -- whereas in our case, in figure 2, as
7 an example, items 53 and 55 show a dual wavelength laser diode. In other
8 words, two different light sources coming from the same unit. So in our -- I
9 believe in our claim language, we indicate a first light source to generate a
10 first light beam, a second light source to generate a second light beam. That
11 isn't occurring in the, in the Ono reference. In the drawing you referred to,
12 figure 16, there is only one light source. So they wouldn't be necessarily
13 correcting for the optical -- for the difference in that optical axis. I think --
14 can you refer again to that column number of the specification again you're
15 referring to?

16 JUDGE SAADAT: Sure. Description of figure 15 or the other
17 teaching about focusing error?

18 MR. DAEBELER: Column, column 2.

19 JUDGE SAADAT: Okay, column 2, starting from around line 45.

20 MR. DAEBELER: Line 45.

21 JUDGE SAADAT: Probably a couple --

22 MR. DAEBELER: Right.

23 JUDGE SAADAT: -- lines before that.

24 MR. DAEBELER: Okay, it is for the purpose of, of the tracking error
25 signals but doesn't say that it's correcting the optical axes, because there is
26 not a first light source and a second light source in this particular figure.

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1 JUDGE SAADAT: But it mentions that the diffraction grating is used
2for or at least relates to the diffraction directions.

3 MR. DAEBELER: Oh, well, the diffraction grating does, you know,
4split maybe one light, one light source, okay, but what we have is two
5separate light sources with, with the two separate wavelengths in our
6particular embodiment.

7 Now the claim language says a first light source to generate a first
8light beam, a second light source to generate a second light beam whose
9optical axis is parallel to the optical axis of the first light beam, the second
10light source being disposed optically farther from a recording medium than
11the first light source. That doesn't appear in figure 16 --

12 JUDGE SAADAT: That was in Ando.

13 MR. DAEBELER: Huh?

14 JUDGE SAADAT: The Examiner relied on Ando and prior art to
15show that.

16 MR. DAEBELER: Right, they relied on Ando to show that, but then
17there's not an articulated reason to combine the two, because, because even
18if you add this one into the system in Ando, suppose you add 218 into the
19system of Ando, what items are you going to replace? It appears you would
20try to replace the dichroic hologram 8 with a beam splitter 7 with this device.
21But Ando's objective is to, is -- because it has two different optical disks of
22two different densities, their objective is a different objective, and this
23device will probably not produce that -- achieve that particular objective of,
24of handling the two different densities. That's probably why they have a
25system which is -- uses the, the photo detector configuration that they have.

1 So in their system, they say an optical pickup device -- in their
2abstract an optical pickup device that is able to record, reproduce
3information signals for first and second optical disks with different recording
4capacities. That's not a tracking error. These are -- I mean that
5configuration, if you place that in, 218 in that specific location, what will
6happen is, is you will -- the hologram will be formed, you know, towards the
7optical disk 2A and 2B and not towards the photo detector, or if you try to
8invert it the other way, I don't believe the reflection patterns would, would
9work out correctly, because if we put 218 and configured it -- if we put the --
10excuse me. I apologize. If we put 219 which is the photo -- the holographic
11element towards 2A and 2B in that configuration, we would not be headed
12towards, let's see, 260 and 214. 214 is the optical disk, so we would be --
13the configuration I guess would have to come in that way where you have
14218 --

15 JUDGE SAADAT: I don't think we should be concerned about the
16specific positioning of these components, because depending on where they
17are, the angles could be adjusted, and that's within the ordinary skill in the
18art knowledge and expertise, and what prompts me to think twice is your
19figure 3 of the application.

20 MR. DAEBELER: Okay.

21 JUDGE SAADAT: And isn't that showing that the grating is, is
22correcting the focusing of these two light beams?

23 MR. DAEBELER: Right. It's -- what it's doing, it's correcting for the
24fact that you had two different optical axes that you started out with. Then
25it's reflected off the disk, off the recording medium, and reflected back
26through the, through the device, through the, the holographic element.

31

1 JUDGE SAADAT: Um-hum.

2 MR. DAEBELER: Okay, through the beam splitter, okay, and then
3 what they're correcting for is the fact that the optical axes may, may be off,
4 because you are trying to have the photo detector pick up the correct signal
5 so it can track it --

6 JUDGE SAADAT: Isn't that the same as focusing?

7 MR. DAEBELER: Well, it's a tracking error signal. That's what the
8 specification refers to as a tracking error signal.

9 Okay, and so if we tried to place this device, as I said, into this
10 location in, in Ando, it would not be able -- it would not achieve the same
11 result because you're -- in Ando you are referring to two optical disks, and
12 you're relying on the fact their problem they're trying to solve is different
13 densities of the optical disks. So that's why it seemed that one having
14 ordinary skill in the art would not have used this device.

15 In addition, as I pointed out before, figure 15 does not show the two
16 light sources. So I think the beam splitter plus its location are part of the
17 invention, because you are trying to achieve a certain objective of trying to
18 obtain, you know, a system where you can have appropriate tracking error
19 signal, and that's what we're arguing.

20 JUDGE SAADAT: Okay.

21 JUDGE HAIRSTON: Okay, any other questions?

22 JUDGE SAADAT: No.

23 JUDGE HAIRSTON: Any questions?

24 JUDGE NAPPI: No.

25 JUDGE HAIRSTON: Thank you.

26 JUDGE NAPPI: Thank you.

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1 MR. DAEBELER: Thank you very much. I appreciate your time.

2 (Whereupon, the hearing concluded on May 14, 2008.)